

### Remarks

Claims 35-73 are pending in this Application. Claims 40, 46-49 and 56-59 have been canceled without prejudice. Claim 50 is withdrawn and remains eligible for rejoinder if it depends from or otherwise requires all limitations of an allowable claim [MPEP 821.04]. Claim 50 may also constitute a linking claim, eligible for rejoinder. Claims 35-36, 38, 41-45, 51-55, 60-61, 63, 66-70 and 72-23 have been amended and find support throughout the specification, such as at paragraphs [0017], [0018], [0025], [0034], [0041], [0047], [0049], [0060], and Table 1, as examples. Applicant respectfully requests acceptance of the amended claims, as no new matter has been introduced with said amendments.

On page 3 of the Office Action, the Examiner rejected the claims on the ground of nonstatutory obviousness-type double patenting (ODP) as being unpatentable over claims in U.S. Patent No. 6,506,248 and U.S. Patent No. 6,346,146. Applicant traverses the rejection stating that the claims are not identical and respectfully requests the ODP rejection be held in abeyance until there is allowable subject matter with the application.

On page 4 of the Office Action, Claims 35-45, 51-55 and 60-70 are rejected under 35 U.S.C. 112, second paragraph, for including terms or phrases considered to be in indefinite, such as “predetermined,” “little,” “essentially” and “adapted to form.” Applicant has respectfully removed the terms or phrases considered indefinite and respectfully requests the rejection under 35 U.S.C. 112, second paragraph, be removed.

On page 5 of the Office Action, Claims 35-45, 51-55 and 60-70 are rejected as being obvious over 35 U.S.C. 103(a) and being unpatentable over the following references:

U.S. Patent No. 3,352,746	DE 3641823 (Abstract only)
U.S. Patent No. 1,932,971	JP 59045953 (Abstract only)
U.S. Patent No. 2,699,097	JP 2004051379 (Abstract only)
U.S. Patent No. 3,231,657	WO 01/014274
U.S. Patent No. 4,523,955	WO 98/45222
U.S. Patent No. 4,477,397	EP 0078119
U.S. Patent No. 5,330,573	EP 997202 (not GB 99702)
U.S. Patent No. 3,501,324	JP 11079729 (Abstract only)
U.S. Patent No. 4,388,257	JP 01-103914 (Derwent Abstract 89-161597/22)
U.S. Patent No. 5,709,743	

Applicant respectfully addresses each of the cited references below.

U.S. Patent No. 3,352,746 (hereinafter "Williams") expressly teaches making a gelled fiber-containing calcium silicate hydrate (CSH) having reduced shrinkage. The gelled CSH is made from diatomaceous earth (which contains amorphous silica and is not considered a crystalline siliceous material) and is not in a semi-dry powder. Williams specifically teaches a resulting *aqueous slurry* that is achieved after mixing in a total of 4000 milliliters of water a combination of 90 grams hydrated lime and 20 grams asbestos fibers, which is mixed for 5 minutes more after adding 90 grams diatomaceous earth, which is then followed by "gently *agitating*," followed by a quiescent period for gelation, followed by "further gentle agitation," the resulting slurry is thereafter molded with partial dewatering to form a self-sustaining block (Col. 3, ll. 47-60). Thus, Williams does not teach or suggest including a crystalline material to make a formed product, does not teach or suggest reacting with suspension agent that is a gel-forming agent, does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water, does not teach or suggest a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, does not teach or suggest that the suspension dewatering as the gel reaction proceeds, and does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Williams also does not expressly teach or suggest that a suspension dewatering as a gel reaction proceeds. Accordingly, Williams does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

U.S. Patent No. 1,932,971 (hereinafter "Hüttemann") expressly teaches preparing a thin fiber-containing colloidal suspension, which is a suspension in which substances are evenly dispersed in water, and as a thin slurry, it is allowed to thicken and preharden (Col. 2, ll. 16-18). The slurry or prehardened mixture is placed in a form or mold and then cured in an autoclave. The hardened mixture is expressly said to exhibit a phenomenon of "thixotropism," which is a property of a formed gel that becomes a fluid when shaken (Col. 2, l. 40). This means that Hüttemann's hardened mixture is not formed with a gel-forming agent that produces a resultant calcium silicate hydrate that is in a semi-dry powder form. Like Williams,

Hüttemann adds asbestos fibers to improve mechanical strength of the hardened mixture (Col. 2, ll. 49-54). Thus, Hüttemann does not teach or suggest reacting with suspension agent that is a gel-forming agent, does not teach or suggest that the suspension dewater as the gel reaction proceeds, and does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Hüttemann also does not expressly teach or suggest that a suspension dewater as a gel reaction proceeds. Accordingly, Hüttemann does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

U.S. Patent No. 2,699,097 (hereinafter "Binkley") expressly teaches a method of making a hardened fiber-containing CSH insulating block by forming a slurry, reacting the slurry by mixing and agitating and molding and press filtering to remove water after the reaction. The components used to make Binkley's product includes a cellular sileaceous material--which is diatomaceous silica and is not considered crystalline siliceous material--in addition to mineral fibers with "the principle reactive component" being hydrated or caustic lime (Col. 2, ll. 40-50), all of which are combined after pre-reacting into a thin slurry that "necessarily is much more dilute than slurries heretofore employed" (Col. 2, ll. 76-78). With Binkley, a slurry is agitated before and after addition of the lime reactant to the other components using agitator 22 and Binkley specifically teaches that mixing (agitation) procedures are preferred because it provides better insulating CSH bodies (Col. 3, ll. 41-55; Col. 3, ll. 79-85). After the reaction, cold water is added to dilute the slurry (Col. 4, ll. 20-25). A piston press mold is then used to shape and dewater the slurry to form a wet molded body (Col. 4, ll. 52-70). Binkley expressly states that it is the use of the high piston press molding pressure applied during filter molding that is essential to forming the final product (Col. 7, ll. 8-16). After press filtering, the molded block is said to contain 540% water by weight (based on wt. of dry solids) and after 10 hours of steam curing, it still had 400% water by weight (based on wt. of dry solids) (Col. 6, ll. 43-50). Thus, Binkley does not teach or suggest including a crystalline material to make a formed product, does not teach or suggest that a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water, does not teach

or suggest that the suspension dewater as the gel reaction proceeds, and does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Binkley also does not expressly teach or suggest that a suspension dewater as a gel reaction proceeds. Accordingly, Binkley does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

U.S. Patent No. 3,231,657 (hereinafter "Kalousek") expressly teaches a solid fiber-containing CSH crystalline insulating material made from a slurry of diatomaceous earth (which is not considered a crystalline siliceous material), quick lime, and asbestos in addition to additional additives, including a dispersing agent in water. The wet slurry is mixed, has a viscosity of cream, poured into a shallow pan and autoclaved (Col. 3, ll. 11-30). After autoclaving a solid is formed (Col. 3, ll. 45-48). Kalousek also teaches a solid CSH material made with quick lime, asbestos and tripoli using the same procedure as described above, which is without a gel forming agent and without a gel reaction, that forms a solid (Example VII). Thus, Kalousek does not teach or suggest including a crystalline material to make a formed product that includes a gel-forming agent, does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water, does not teach or suggest that the suspension dewater as a reactive gel forming reaction proceeds, and does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Kalousek also does not expressly teach or suggest that a suspension dewater as the gel reaction proceeds because no gel reaction is disclosed. Accordingly, Kalousek does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

U.S. Patent Nos. 4,477,397 and 4,523,955 (hereinafter "Helscer") expressly teaches a solid crystalline fiber-containing CSH (e.g., fiber cement). The solid is made from a slurry that includes a siliceous material, a calcareous material and cellulose fibers with or without alkali-resistant glass fibers and "particulated greenware," which is a previously molded CSH slurry product in a particulated form (after pulverization), the previously molded slurry made of a calcareous material, siliceous material, reinforcing fibers and water (Col. 1, ll. 37-62; Col. 3, ll. 34-49). After mixing all the ingredients in water as a slurry, the slurry is agitated with an

agitator (Col. 3, ll. 50-52), poured in to a mold and shaped by filter press molding to dewater (Col. 3, ll. 65-66). A solid block is formed after autoclaving. Thus, Helser does not teach or suggest reacting with suspension agent that is a gel-forming agent, does not teach or suggest a predetermined quantity of a suspension agent is added to permit said gel reaction to take place with little or no agitation, does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water, does not teach or suggest that the suspension dewater as the gel reaction proceeds, and does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Helser also does not expressly teach or suggest that a suspension dewater as the gel reaction proceeds because no gel reaction is disclosed. Accordingly, Helser does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

U.S. Patent No. 4,388,257 (hereinafter "Oguri") expressly teaches a solid crystalline fiber-containing CSH (e.g., fiber cement) manufactured by mixing together a water slurry of a siliceous source and a water slurry of a calcareous source in heat with stirring and keeping this in a liquid condition as an aqueous slurry (Abstract; Col. 2, ll. 37-42; Col. 3, ll. 22-25). To the liquid slurry is then added reinforcing fibers of asbestos, glass or rock wool, which is then press filter molded to dewater (Col. 3, ll. 29-44). The molded product is then cured and when formed provides products having solid, crystalline tobermorite or xonotlite with a water content of more than 60% by weight and a bulk density of less than 0.6 g/cm<sup>3</sup>, thereby forming a very different product than described by the Applicant's application for patent (Col. 3, ll. 55-57). Thus, Oguri does not teach or suggest reacting with suspension agent that is a gel-forming agent, does not teach or suggest a predetermined quantity of a suspension agent is added to permit said gel reaction to take place with little or no agitation, does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water, does not teach or suggest that the suspension dewater as the gel reaction proceeds, and does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Oguri also does not expressly teach or suggest that a suspension dewater as the gel reaction proceeds because no gel reaction is disclosed. Accordingly, Oguri does not teach or suggest each and every element of the claimed invention

or the invention on its whole, which is required for a showing of obviousness.

U.S. Patent No. 5,330,573 (hereinafter "Nakano") expressly teaches a solid fiber-containing crystalline tobermorite CSH (e.g., fiber cement) molded to provide high strength like natural timber. The formed CSH requires a mixing together of two types of silica that ends up including a combination of both amorphous and crystalline siliceous material. Without the combination of both amorphous and crystalline siliceous material, Nakano states that the molded product will not be suitable or desirable (Col. 3, ll. 38-45). However, the crystalline siliceous material is not added during the gelation period. Instead, a calcareous material is first mixed with amorphous silica in water, the ratio of calcareous to amorphous silica material is said to be greater than 0.8 or there will be no gelation (Col. 4, ll. 10-28). Gelation is said to proceed with intermittent mixing (Col. 4, ll. 49-50) after which crystalline silica and glass chopped fibers are added, followed by further mixing, addition of further water and further mixing with a mixer (Col. 4, ll. 51-60). The calcareous material to final silica material ratio is preferably 0.7 to 0.85 and cannot be less than 0.6 (Col. 3, ll. 50-59). The diluted mixture is put into a metal mold and pressed, which is followed by autoclaving. The product formed is tobermorite or xonotlite (crystalline CSH), which is not calcium silicate hydrate is in a semi-dry powder form. Thus, Nakano does not teach or suggest contacting a calcareous material with a crystalline siliceous material in an aqueous environment under elevated temperature and pressure and for a sufficient time to permit the calcareous material and crystalline siliceous material to react and form calcium silicate hydrate, wherein prior to said reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water, does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water, and does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Nakano also does not expressly teach or suggest that a suspension dewateres as the gel reaction proceeds. Accordingly, Nakano does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

U.S. Patent No. 3,501,324 (hereinafter "Kubo") expressly teaches a solid fiber-containing crystalline CSH (e.g., fiber cement) formed from a slurry of silica and lime and reinforcing fibers of asbestos, rock wool, or glass (Col. 2, ll. 35-60). The slurry is heated and pressed and is stirred during this period, preferably continuously, to prevent formation of a hardened mass before shaping (Col. 3, ll. 8-33). The *aqueous* slurry is then molded and shaped by pressing under heat (Col. 3, ll. 45-56). Thus, Kubo does not teach or suggest a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water, does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water, and Kubo does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Kubo does not expressly teach or suggest that a suspension dewateres as the gel reaction proceeds since no gel reaction is disclosed. Accordingly, Kubo does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

U.S. Patent No. 5,709,743 (hereinafter "Leture") expressly teaches a cement or concrete accelerating agent. The reference teaches concrete hardening by seeding with mortar ground CSH (synthetic or natural), ground  $\text{CaCl}_2$ , alkaline based admixtures, or re-ground pure cement pastes. Novel crystalline seeds that originate from an aqueous suspension is also taught by Leture. The aqueous suspension is said to require very fine particles with at least 35 wt.% CSH. Particles in the aqueous suspension are prepared by hydrating (adding water to) a silica-containing cement hydraulic binder (artificial Portland cement, Portland clinker, compound Portland cement or mixtures of, see Col. 4, ll. 53-58) to form a dilute suspension, wet grinding the suspension, and continuously agitating the dilute suspension with corundum balls (Col. 6, ll. 5-36). The aqueous suspension is used as an accelerator at 1-2 wt.% to accelerate cement hardening (Examples 11-32; Conclusions). Thus, Leture does not teach or suggest anything remotely related to the claimed invention, such as contacting a calcareous material with a crystalline siliceous material in an aqueous environment under elevated temperature and pressure and for a sufficient time to permit the calcareous material and crystalline siliceous material to react and form calcium silicate hydrate, wherein prior to said reaction, a

predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water, such that the resultant calcium silicate hydrate is in a semi-dry powder form. With Leture, there is no suspension agent added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water. Leture does not teach or suggest a gel upon contact of a gel forming agent with any combination of a calcareous material, crystalline siliceous material or water. Leture does not teach or suggest that a suspension deters as a gel reaction proceeds, since no gel reaction is disclosed. Leture does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Accordingly, Leture does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness. In the International Preliminary Examination Report (IPRP) of PCT/AU2003/001456, Leture is stated to be relevant only to Claim 11 (equivalent to Claim 46 of the subject application, now canceled without prejudice). As such, according to the IPRP and the findings in the reference itself, Leture does not appear to be relevant to the claimed invention and should be removed as a reference.

DE 3641823 expressly teaches calcium silicate and fiber-containing building panels. The fiber cement panels are made by initially converting silicon dioxide ( $\text{SiO}_2$  as silicic acid) with  $\text{CaO}$  in the presence of water, which forms a gel and is added to other components, mixed on a water permeable conveyor belt, then pressed and cured by autoclaving and drying. The mixture is said to include ground quartz meal, amorphous silica, white lime, finely ground calcium silicate, cellulose fibers and alkali-resistant glass fibers. DE 3641823 does not expressly or impliedly teach or suggest that prior to said reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water, such that the resultant calcium silicate hydrate is in a semi-dry powder form. DE 3641823 also does not expressly teach or suggest that a suspension deters as the gel reaction proceeds, since no gel

reaction is disclosed. Accordingly, DE 3641823 does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

JP 59045953 is an Abstract only and specifically recites preparing fiber cement building blocks. The blocks are made by initially preparing a slurry of 100 parts diatomaceous earth (a non-crystalline siliceous material), 80 parts  $\text{Ca}(\text{OH})_2$  and water, letting it gel, adding Portland cement, silica stone powder and pulp, then mixing and molding to form a semi-plastic block. The semi-plastic block is cut into plates and the plates are cured in an autoclave. Like DE 3641823, JP 59045953 does not expressly or impliedly teach or suggest that prior to said reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water, such that the resultant calcium silicate hydrate is in a semi-dry powder form. JP 59045953 also does not expressly teach or suggest that a suspension dewateres as the gel reaction proceeds. Accordingly, JP 59045953 does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness. In the IPRP of PCT/AU2003/001456, JP 59045953 is stated to disclose a gelled calcium material. JP 59045953 is stated to be relevant to only Claim 21 (which is equivalent to Claim 56 of the subject application, now canceled without prejudice). As such, according to the IPRP and the findings in the reference itself, JP 59045953 does not appear to be relevant to the claimed invention and should be removed as a reference.

JP 2004051379 is an Abstract only and specifically recites the manufacturing of fiber-containing CSH articles. The articles are prepared initially by making calcium silicate seed crystals (similar to that of Letore, above) by hydrating crystalline silicic acid and a calcareous material in water and then pressing the slurry to obtain CSH, which is shaped with dehydration and dried. Like Letore, DE 3641823 and JP 59045953, JP 2004051379 does not expressly or impliedly teach or suggest the claimed invention. JP 2004051379 does not teach or suggest that prior to the reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel

forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water, does not teach that such that the resultant calcium silicate hydrate is in a semi-dry powder form. JP 2004051379 does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water. JP 2004051379 does not expressly teach or suggest that a suspension dewateres as the gel reaction proceeds since no gel reaction is disclosed. JP 2004051379 does not teach or suggest that that the resultant calcium silicate hydrate is in a semi-dry powder form. Accordingly, JP 2004051379 does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

WO 01/014274 discloses making CSH (e.g., cement) by mixing and stirring in an autoclave under constant agitation (pg. 25, ll. 10-11) a hot slurry of burned lime and a hot slurry of fluxed calcined diatomaceous earth (which is not considered crystalline siliceous material) or other siliceous source (pg. 9, pg. 16). The mixture is not stated to have gelled and is then cooled to produce crystals, such as foshagite, xonotlite (pg. 10), and/or riversidite (pg. 12). The crystals are formed as hard lumps that have to be broken through use of a mortar and pestle before being capable of forming a powder (pg. 26, ll. 1-3). In the IPRP of PCT/AU2003/001456, WO 01/014274 is stated to disclose the use of clay and diatomaceous earth in making CSH. Diatomaceous earth is not considered a crystalline siliceous material. WO 01/014274 is further stated in the IPRP to be relevant to Claims 1, 16, and 25 of PCT/AU2003/001456, which are directed to a method of producing CSH (Claim 1), the use of a gel in manufacture of CSH (Claims 16) and the use of a suspension agent in the manufacture of CSH (Claim 25). However, Applicants find that WO 01/014274 does not teach or suggest that prior to the reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water, does not teach that such that the resultant calcium silicate hydrate is in a semi-dry powder form. WO 01/014274 does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water. WO 01/014274 does not teach or suggest that a

suspension dewatering as the gel reaction proceeds. WO 01/014274 does not teach or suggest that the resultant calcium silicate hydrate is in a semi-dry powder form. Accordingly, WO 01/014274 does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

WO 98/45222 provides insight in its background as to the state of the art prior to Applicants' invention, in which slurries of a siliceous material and a calcareous material were mixed under heat and pressure to provide a variety of crystalline forms of CSH (pg. 1). The invention disclosed in WO 98/45222 is the formation of 3-D interlocking CSH beads, resistant to crushing (pg. 3, ll. 20-23), and, therefore, not in a semi-dry powder form. The bulk density of the CSH beads is very low, 0.06 to 0.3 g/cm<sup>3</sup> (pg. 1, ll. 1-2), which differs from the CSH of Applicants' invention. The CSH of WO 98/45222 is expressly made as a dilute slurry of a siliceous material and lime (pg. 7) and are reacted in a stirred pressure vessel. The lime content is less in wt.% than the siliceous material. After reacting, the slurry is diluted again with lime water to a final concentration of 10-12 wt.% dry solid CSH (pg. 17, ll. 20-21). In the IPRP of PCT/AU2003/001456, WO 98/45222 is stated to disclose making CSH by reacting a calcareous material with a siliceous material where the siliceous can include diatomaceous earth or silica fume (which is considered amorphous, non-crystalline, silicon dioxide and is not considered to be a crystalline siliceous material). Diatomaceous earth is also not considered crystalline siliceous material. WO 98/45222 is further stated in the IPRP to be relevant to Claims 1, 16, and 25 of PCT/AU2003/001456, which are directed to a method of producing CSH (Claim 1), the use of a gel in manufacture of CSH (Claims 16) and the use of a suspension agent in the manufacture of CSH (Claim 25). However, Applicants find that, WO 98/45222 does not teach or suggest that prior to the reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water, does not teach or suggest that such that the resultant calcium silicate hydrate is in a semi-dry powder form. WO 98/45222 does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water and does not teach or suggest that a suspension dewatering as the gel reaction proceeds. WO 98/45222 does not teach or suggest that

that the resultant calcium silicate hydrate is in a semi-dry powder form. Accordingly, WO 98/45222 does not teach each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

EP 0078119 expressly teaches a "calcium silicate based material comprising a crystalline matrix of calcium silicate consisting predominantly of xonotlite and/or tobermorite" (pg. 2, ll. 19-20). The siliceous material used is preferably amorphous in structure, reciting silica fume, which is not considered a crystalline siliceous material (pg. 2, l. 25). The calcium silicate based material of EP 0078119 is made after preparing a slurry of calcium oxide and silica with optionally a small amount of manganese, magnesium (or other ions that can incorporate into the calcium silicate crystal structure and allow a higher solids content in the slurry with increasing the viscosity of the slurry) (pg. 2, ll. 37-40), which means that the optional ions do not enhance gel formation. The slurry of lime and amorphous silica is autoclaved, after which additional silica and calcium ions (to permit a cementitious reaction) as well as non-asbestos fibers are added, mixed, moulded into a slab and dried (pg. 2, ll. 42-45). EP 0078119 does not teach or suggest that prior to the reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water. EP 0078119 does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water and does not teach or suggest that a suspension deters as the gel reaction proceeds. In the IPRP of PCT/AU2003/001456, EP 0078119 is stated to disclose making CSH which use diatomaceous earth, clay or cellulose. Applicants do not find such a teaching in EP 0078119, and only find CSH to be made with a slurry using silica fume, (pg. 2, l. 25; Examples). EP 0078119 is further stated in the IPRP to be relevant to Claims 1, 16, and 25 of PCT/AU2003/001456, which are directed to a method of producing CSH (Claim 1), the use of a gel in manufacture of CSH (Claims 16) and the use of a suspension agent in the manufacture of CSH (Claim 25). In view of the statements made above, EP 0078119 does not teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

In the IPRP of PCT/AU2003/001456, GB 997202 is stated to disclose making CSH which uses diatomaceous. GB 997202 is further stated in the IPRP to be relevant to Claims 1, 16, and 25 of PCT/AU2003/001456, which are directed to a method of producing CSH (Claim 1), the use of a gel in manufacture of CSH (Claims 16) and the use of a suspension agent in the manufacture of CSH (Claim 25). However, Applicants find that GB 997202 is expressly directed to making particulated CSH formed from a hydration reaction of high temperature phase CSH (e.g., calcium silicat xonotlite, pg. 2, ll. 50-52) with aluminium sulfate at high temperature (pg. 1, ll. 40-45). The aluminium sulfate treatment is used to adjust the pH (pg. 2, ll. 96-100). The high temperature phase CSH is prepared by the standard hydrothermal reaction of lime and reactive silica slurry (pg. 2, ll. 59-63). The reactive silica used is diatomaceous earth (not considered a crystalline siliceous material; see Examples, such as I, II, VI, VIII). After the reaction, the slurry is oven dried and the product had to be ground. Thus, GB 997202 does not teach or suggest that prior to the reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water. GB 997202 does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water. GB 997202 does not expressly teach or suggest that that the resultant calcium silicate hydrate is in a semi-dry powder form and does not teach or suggest that the suspension dewater as a gel reaction proceeds,. In view of the findings, GB 997202 cannot be found to teach or suggest each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

JP 11079729 is an Abstract only. In the IPRP of PCT/AU2003/001456, JP 11079729 is stated to disclose making CSH which uses amorphous silica and diatomaceous earth, neither of which are considered crystalline siliceous material. JP 11079729 is further stated in the IPRP to be relevant to Claims 1, 16, and 25 of PCT/AU2003/001456, which are directed to a method of producing CSH (Claim 1), the use of a gel in manufacture of CSH (Claims 16) and the use of a suspension agent in the manufacture of CSH (Claim 25). However, Applicants find that JP 11079729 does not teach or suggest the claimed invention on its whole nor each and every

element of the claimed invention, which is required for a showing of obviousness. Instead, JP 11079729 expressly teaches a standard method of making solid CSH (e.g., cement) by preparing a slurry of a raw pulverized calcium material and a raw pulverized silica material, hydrothermally reacting the slurry to form the hardened and solid CSH. JP 11079729 does not teach or suggest that prior to the reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation, wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water. JP 11079729 does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water. JP 11079729 does not expressly teach or suggest that that the resultant calcium silicate hydrate is in a semi-dry powder form and does not expressly teach or suggest that the suspension dewatered as the gel reaction proceeds. In view of these findings, JP 11079729 cannot be found to teach each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

JP 01-103914 is an Abstract only. JP 01-103914 is found to teach the synthesis of calcium silicate requiring amorphous silicon dioxide (preferably silica fume, which is not considered crystalline siliceous material) and calcium hydroxide and water. In the IPRP of PCT/AU2003/001456, JP 01-103914 is stated to disclose making CSH which uses silica fume, which is not considered crystalline siliceous material. JP 01-103914 is further stated in the IPRP to be relevant to Claims 1, 16, and 25 of PCT/AU2003/001456, which are directed to a method of producing CSH (Claim 1), the use of a gel in manufacture of CSH (Claims 16) and the use of a suspension agent in the manufacture of CSH (Claim 25). However, Applicants find that JP 01-103914 does not teach or suggest each and every element of the claimed invention or the claimed invention on its whole, which is required for a showing of obviousness. Instead, JP 01-103914 expressly teaches a standard method of making solid CSH (e.g., cement) by reacting fine particles of amorphous silicon dioxide (preferably silica dust/silica fume, which are not considered crystalline siliceous material) with calcium hydroxide and water to form solid CSH. JP 01-103914 does not teach or suggest that prior to the reaction, a predetermined quantity of a suspension agent is added to permit said reaction to take place with little or no agitation,

wherein the suspension agent is a reactive gel forming agent that forms a gel upon contact with any combination of the calcareous material, crystalline siliceous material and water. JP 01-103914 does not teach or suggest a gel upon contact of a gel forming agent with any combination of the calcareous material, crystalline siliceous material and water. JP 01-103914 does not expressly teach or suggest that that the resultant calcium silicate hydrate is in a semi-dry powder form and does not teach or suggest that a suspension dewateres as the gel reaction proceeds,. In view of these findings, JP 01-103914 cannot be found to teach each and every element of the claimed invention or the invention on its whole, which is required for a showing of obviousness.

Applicant has shown that none of the cited documents are obvious over the claimed invention. Applicant respectfully requests entry and allowance of the pending claims.

### **Conclusion**

Applicant respectfully submits that the Application is in condition for allowance and earnestly seeks allowance of the claims provided in the Listing of Claims beginning on page 2 of this paper.

Should the Examiner have questions, comments, or suggestions in furtherance of prosecution of this Application, please contact Applicants' representative at 214.999.4330. Applicants, through their representative, stand ready to conduct a telephone interview with the Examiner to review the Application or this Amendment if the Examiner believes that such an interview would assist in advancement of this Application.

Fees for an extension of time are included with this filing and this is considered a petition for extension of time. No additional fees are believed to be due with this submission.

To the extent that further fees are required with this response, the Commissioner is hereby authorized to charge payment of said fees to Deposit Account No. 07-0153 of Gardere Wynne Sewell LLP and reference Attorney Docket No. 131279-1039.

In the event that any additional time is needed for this filing, or any additional time in excess of that requested in a petition for an extension of time, please consider this a petition for an extension of time for any needed extension of time pursuant to 37 C.F.R. § 1.136 or any other section or provision of Title 37. Applicant respectfully requests that the Commissioner grant any such petition and authorize the Commissioner to charge the Deposit Account referenced above. Please credit any overpayments to this same Deposit Account.

This is intended to be a complete response to an Office Action mailed May 5, 2009. This Amendment has been submitted electronically.

Please direct all correspondence to the practitioner listed below at Customer No.  
60148.

Respectfully submitted,

GARDERE WYNNE SEWELL LLP

/Monique A. Vander Molen/

Monique A. Vander Molen  
Registration No. 53,716

Telephone: 214.999.4330  
Facsimile: 214.999.3623

Dated: November 4, 2009